

CLAIMS

1. A contactor apparatus for acquiring
electrical conduction to a plurality of
5 semiconductor devices formed on a semiconductor
wafer, comprising:

a first contactor having contacts directly
contacting terminals of a first system of said
semiconductor devices; and

10 a second contactor having contacts to be
electrically connected to terminals of a second
system of said semiconductor devices, said second
contactor movable relative to said first contactor
and having a separate path electrically independent
15 from said first contactor.

2. The contactor apparatus as claimed in
claim 1, comprising a moving mechanism for
sequentially moving said second contactor to
20 positions corresponding to the plurality of
semiconductor devices.

3. The contactor apparatus as claimed in
claim 1, wherein said first contactor is a membrane
25 contactor.

4. The contactor apparatus as claimed in
any one of claims 1 to 3, wherein said first
contactor has openings, and portions provided with
30 the contacts of said second contactor are brought
into contact with the terminals of the second system
of said semiconductor devices through said openings.

35 5. The contactor apparatus as claimed in
any one of claims 1 to 3, wherein said first
contactor has extending contacts extending from a
surface of said first contactor facing said second

5 contactor to a surface of said first contactor facing said semiconductor device, and the contacts of said second contactor is electrically connected to the terminals of the second system of said semiconductor devices by contacting said extending contacts.

10 6. The contactor apparatus as claimed in claim 5, further comprising a suction mechanism for attracting said first contactor toward said semiconductor wafer.

15 7. The contactor apparatus as claimed in claim 6, wherein said suction mechanism comprises: a cassette to which said semiconductor wafer is attached; an elastic seal member provided to said cassette; and a suction passage connected to a space defined by said cassette, said first contactor and said elastic seal member, wherein said semiconductor wafer is located in said space.

25 8. The contactor apparatus as claimed in any one of claims 1 to 3, comprising an elastic member located on a surface of said first contactor opposite to a surface facing said semiconductor wafer so as to apply a pressing force to said first contactor through said elastic member.

30 9. The contactor apparatus as claimed in claim 5, comprising a sheet having an anisotropic conductivity and located on a surface of said first contactor opposite to a surface facing said semiconductor wafer, wherein said contacts is brought into contact with said contacts by pressing

the contacts of said second contactor against said extending contacts.

10. The contactor apparatus as claimed in
5 claim 1, wherein projection electrodes are formed on
the terminals of the first system of said
semiconductor wafer and terminals of the second
system, and the contacts of said first contactor
have concave surfaces corresponding to a shape of
10 said projection electrodes so that the concave
surfaces are brought into contact with said
projection electrodes.

11. The contactor apparatus as claimed in
15 claim 5, wherein the extending contacts of said
first contactor have concave portions which are
brought into contact with the contacts of said
second contact.

20 12. The contactor apparatus as claimed in
any one of claims 1 to 3, comprising temperature
control means for controlling a temperature of said
semiconductor wafer.

25 13. The contactor apparatus as claimed in
claim 12, wherein said temperature control means
includes a fluid passage provided to said second
contactor so as to locally perform a temperature of
semiconductor wafer by supplying a fluid of a
30 predetermined temperature to said fluid passage.

14. The contactor as claimed in claim 13,
wherein said temperature control means includes a
temperature sensor which detects a temperature of
35 the fluid discharged from said fluid passage so as
to control the temperature of the fluid supplied to
said fluid passage based on an output of said

temperature sensor.

15. The contactor apparatus as claimed in
claim 12, comprising a cassette attached to said
5 semiconductor wafer, wherein said temperature
control means has a medium passage provided to said
cassette so as to control the temperature of said
semiconductor wafer by causing a medium of a
predetermined temperature flowing through said
10 medium passage.

16. The contactor apparatus as claimed in
claim 12, comprising a temperature control unit to
which a cassette attached to said semiconductor
15 wafer is removably attached, wherein said
temperature control means has a medium passage
provided to said temperature control unit so as to
control the temperature of said semiconductor wafer
by causing a medium of a predetermined temperature
20 flowing through said medium passage.,

17. A test method for testing a plurality
of semiconductor devices formed on a semiconductor
wafer, comprising;
25 a step of attaching said semiconductor
wafer to a predetermined position of a cassette;
a step of placing and fixing a first
contactor to said semiconductor wafer, the first
contactor having contacts which are directly brought
30 into contact with power supply terminals formed on
the semiconductor devices of said semiconductor
wafer;
a step of electrically connecting contacts
of a second contactor to signal terminals formed on
35 the semiconductor devices of said semiconductor
wafer; and
a step of testing said semiconductor

devices by inputting signals to said semiconductor devices through said second contactor while supplying a power to said semiconductor devices through said first contactor so as to detect outputs 5 corresponding to the signals.

18. The test method as claimed in claim 17, wherein the step of testing includes a step of sequentially testing said semiconductor devices 10 while moving said second contactor.

19. The test method as claimed in claim 17 or 18, wherein the step of testing includes a step of performing a test while controlling a 15 temperature of said semiconductor wafer through said second contactor.

20. The test method as claimed in claim 17 or 18, wherein the step of testing includes a 20 step of performing a test while controlling a temperature of said semiconductor wafer through said cassette.

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